

Claims

What is claimed is:

1. A microarray comprising at least 10,000 different features on a substrate, wherein each feature comprises:

5 a nanotube connecting two electrodes; and
an oligonucleotide immobilized on the nanotube, wherein each of the features has
a different oligonucleotide.

2. The microarray of Claim 1 wherein the substrate comprises a microelectronic

10 circuit for detecting at least one electrical characteristic of the nanotubes connecting
electrodes.

3. The microarray of Claim 2 wherein there are at least 1,000,000 features on a
substrate.

15

4. The microarray of Claim 3 wherein the at least one electrical characteristic
comprises

conductance.

20 5. A method for manufacturing a microarray comprising:

fabricating a substrate comprising electrodes and microelectronic circuits;
growing nanotubes connecting electrodes; and
immobilizing oligonucleotides on the nanotubes.

6. The method of Claim 5 wherein the immobilizing comprises synthesizing oligonucleotides on the nanotubes.
- 5 7. The method of Claim 6 wherein the synthesizing comprises photodirected synthesis.
8. The method of Claim 5 wherein the immobilizing comprises spotting oligonucleotides on the nanotubes.
- 10 9. The method of Claim 8 wherein the spotting comprises delivering oligonucleotide onto nanotubes using an ink-jet printer.